

Jobs and Earnings Mobility in a Sample of Developing and Emerging Economies

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1. Introduction

Recent evidence suggests that most market economies show significant dynamism in terms of both firm creation and destruction and job flows. Many firms are created and destroyed every year, and surviving firms undergo a continuous process of transformation (Caves 1998; Bartelsman and Doms 2000; Bartelsman and others, 2004, for surveys). As a result, a substantial number of jobs are created and destroyed, and an even larger number of workers change status in the labor market, moving across jobs, from employment to unemployment and vice versa, and also entering and exiting the labor market (see, for example, Davis and Haltiwanger 1999). Large, if not even larger, rates of mobility are also observed in developing countries (see IADB 2003, World Bank 2005; Maloney, 1999; and Bartelsman and others, 2004).

Large job flows have sparked one of the most controversial debates on institutional design and economic policy (see e.g. Haltiwanger and others, 2004). On the one hand, labor mobility may promote efficiency and economic growth, if economic forces induce the reallocation of resources towards the most productive uses. On the other hand, high mobility may imply uncertainty for workers with associated concerns about income security. The potential trade offs between economic efficiency and job stability assumes a particularly important role in middle and low income countries, where limited safety nets do not insulate workers against economic risk. In the last fifteen years, many of them have seen rapid economic transformation lead by structural reforms and trade integration. While such reforms have brought productivity gains (Fernandes, 2002; Pavcnik, 2002; Eslava and others, 2004) they have also heighten labor reallocation and often a sense of job insecurity even among those in formal jobs (Haltiwanger and others 2004, Eslava and others, 2004)

In this paper we assess the nature of labor mobility and the effects on workers' earnings in a sample of countries that underwent important – albeit different -- structural reforms over the past decade with significant impact on the magnitude and characteristics of labor mobility. While there is an extensive research on job and workers flows, most of the available studies focus on movements across the three basic statuses in the labor market: Employment, Unemployment and Out of the Labor Market. However, labor mobility often involves switches across different *types* of jobs with significant effects on earnings. This is particularly relevant for many developing countries, where the incidence of the informal, unregistered or grey economy looms large and there are potentially large differences in the level of earnings, benefits and employment conditions across different types of jobs. Thus, we classify workers in six labor market statuses: formal wage employment; informal wage employment; self-employment in agricultural activities, self-employment in non-agricultural activities; unemployment; out of the labor force.

The most complex issue in our classification is how to characterize informal wage employment. In the statistical and economic literature there are different definitions of informality. Some of these definitions try to account for different forms of non-reporting or partial reporting of activities to the tax authorities and adjust GDP estimates to include these activities (see e.g. Schneider, 2004). Other definitions refer to the share of employment that may not be fully registered or declared. Drawing from the most recent

definition of informal employment and the limitation of our data to characterize working conditions in most countries, we have identified informal wage employment as those employees who do not have affiliation to the social security system through their employment contract or do not have a written contract at all.¹

In the paper, we look at different dimensions of labor mobility and associated changes in earnings in our sample of countries. In particular, we address a number of empirical questions, including: what is the magnitude of worker flows in different countries? Are there common patterns in the flows across specific statuses in the labor market? For example, are flows into unemployment more likely to occur among those in formal or informal jobs? Or, is informality a stepping stone for moving to a formal job? Moreover, what is the impact on wages of moving from one type of job in the labor market to another? Do workers in different parts of the earnings distribution experience different wage changes when the move in and out of formality and informality? Information on these different dimensions of labor mobility shed some additional light on possible segmentation in the labor market and, drawing from cross-country differences, on the role of policy and institutions.

The paper is structured as follows: Section 2 discusses our methodology to assess labor market mobility and associated wage changes. Section 3 presents our longitudinal micro data drawn from Household Surveys and Labor Force Surveys. Section 4 discusses labor transitions for our countries, also controlling for different sizes of the populations of origin and destinations. The section also presents regression analyses of the transition across different states in the labor market aimed at assessing the key individual and firm characteristics that influence the transitions while also controlling for the labor market status of origin. Section 5 looks at the position in the earnings distribution of workers that change labor market status; while Section 6 focuses on wage changes associated with labor market transitions. Finally, Section 7 provides some tentative conclusions.

2. Assessing labor mobility and their impact on earnings

2.1 *Measuring mobility*

We assess the degree of mobility of individuals in the labor market and the patterns of mobility across different statuses in different ways. Individuals are classified as belonging to one labor market status in year t and one status in year $t+k$, where k is positive integer. We follow individuals over time exploiting the longitudinal dimension of the data.

¹ The official definition of informal employment of the 1993 15th International Conference of labor statisticians focused on the enterprise as the unit of reference for the identification of informal employment – informal own account activities or informal enterprises defined as those below a size threshold or lack of registration. At the 17th International Conference of Labor Statisticians the definition shifted to the characteristics of the job rather than those of the enterprise: “Informal employment” is understood to include all remunerative work – both self-employment and wage employment - that is not recognized, regulated or protected by existing legal or regulatory frameworks and non remunerative work undertaken in an income-producing enterprise”.

The simplest way to describe labor mobility is by calculating the conditional probabilities of finding a worker in status j at $t+k$, conditional on the fact that she was in status i at time t , that is to say, P_{ij} , or transition matrix. Formally,

$$(1) \quad p_{ij} = p(S_{t+k} = j \setminus S_t = i) = p(S_t = i \cap S_{t+k} = j) / p(S_t = i)$$

By construction, the sum of the elements in each row of a transition matrix is equal to one, and the totals at the bottom of each column represent the share of workers in each status at the end of period $t+k$. For countries for which data are available for more than two years, the transition matrices are constructed pooling all individual transitions, regardless of the period they occur.

The first step in our analysis of the dynamics of labor market is to compute aggregate indicators of mobility out of the observed transitions (the P_{ij} matrices). The objective here is to assess the “quantity” of mobility, rather than the structure of inter-status flows to which we will turn in the next section.

We use two classes of indicators to analyze the size of these inter-state flows. The first one addresses the question of what fraction of workers change state in any given period, disregarding origin and destination states. These indicators are based on the whole transition matrix. The second exploits the fact that there are substantial differences in the mobility of workers observed in different labor market states. These indicators only make use of the main diagonal elements of the transition matrix and are used here to highlight the fact that certain labor market states tend to exhibit much larger persistence than others.

Within the first class of aggregate mobility indicators we consider two indicators that make use of the fact that perfect mobility and perfect immobility result in two limiting matrices. Perfect immobility is a situation where the probability of transition from any state in t to the same state in $t+1$ equals 1 and the probability of transition to any other state equals 0. This process results in a transition matrix equal to the identity matrix I . In the case of perfect mobility the probability of transition to any state in $t+1$ is the same disregarding the state in t . This process results in a transition matrix with all rows equal to the invariant distribution and thus the determination of this matrix is zero. We therefore compute the following two measures

$$(2) \quad MT = \frac{1}{J-1} [J - \text{trace}(P_{ij})]$$

$$(3) \quad MD = 1 - |\det(P_{ij})|^{1/J-1}$$

where J is the number of states under consideration and $\text{trace}(P)$ refers to the sum of the main diagonal elements of the P matrix. By construction the MT measures the importance of state-persistence, as it is decreasing on the value of the main diagonal elements of the matrix. MT would be 0 in the case of perfect immobility and 1 in case of perfect mobility. Similarly, the MD indicator varies between 0 in the case of perfect immobility ($\det(I) = 1$)

and 1 in the case of perfect mobility, where again J refers to the number of states and $\det(P)$ refers to the determinant of the P matrix. MD measures the overall quantity of mobility. Mobility can also be assessed out of the individual elements of the main diagonal of the transition matrix

2.2 Worker Heterogeneity

In assessing the magnitude and characteristics of transition matrices it is of importance to control for the possible heterogeneity of individuals across states and the fact that different individuals are likely to have different probabilities of transiting across states. In particular, we aim to assess whether differences in individual characteristics of the population of origin have an impact on their probabilities of moving to the other possible destination states. To do so, we estimate a *dynamic multinomial logit model* of the probability of being in state j in period $t+k$ conditional on being in state i in period t controlling for a number of individual and household characteristics that are likely to influence the decision to participate in the labor market, seek different types of jobs and to move to other statuses. Then we predict transition probabilities conditional on the initial labor market status. The dynamic multinomial logit offers a statistically rigorous way of assessing whether, given the initial state, a worker is more or less likely to move to another state given her characteristics.

We assume that an individual m can be in any of J possible labor market states at time t .² We consider the maximum of 6 states in the labor market. The “utility” of being in state j ($j = 1, \dots, J$) in time period $t > 1$ is specified as:

$$(5) \quad V_{m,j,t} = \alpha_{mj} + X'_{mt} \beta_j + Z'_{mt-1} \gamma_j + \varepsilon_{mjt}$$

where X_{mt} is a vector of explanatory variables that includes gender (female), location (rural), age and age squared, education dummies (primary or less, lower secondary, upper secondary and tertiary), household head, household size, household dependency ratio and time dummies. Z_{mt-1} is a vector of dummy variables indicating the initial labor market status, and the interactions of these dummies with female, age, education dummies. Here the non working sector is taken as the reference state. The vectors β_j and γ_j are parameters to be estimated. α_{mj} is a random effect reflecting time invariant unobserved heterogeneity. To identify the model, β_1 , γ_1 , and α_{i1} are normalized to 0. The ε_{mjt} are i.i.d. error terms. They are assumed to be independent of the X_{mt} and α_{mj} . Hence, the probability for individual m to be in state j at time $t > 1$, given characteristics X_{mt} , random effects α_{mj} ’s and the lagged state dummies, can be written as:

$$(6) \quad P(j | X_{mt}, Z_{mt}, \alpha_{m1}, \dots, \alpha_{mJ}) = \frac{\exp(X'_{mt} \beta_j + Z'_{mt-1} \gamma_j + \alpha_{mj})}{\sum_{s=1 \dots j} [\exp(X'_{mt} \beta_s + Z'_{mt-1} \gamma_s + \alpha_{ms})]}$$

The presence of the lagged labor market status Z_{it-1} in the specification introduces a possible bias in the estimation insofar as the lagged status may be correlated with

² See also Gong, Soest and Villagomez (2000).

individual characteristics. In particular, these individual characteristics may affect the labor market status of the individual at any point in time and thus also its probability of moving from there to another status. The solution to this problem would be to use the Heckman (1981) procedure in which for $t = 1$ a static multinomial logit model replaces equation [6] above.³ The practical implementation of this procedure is, however, affected by limitation in our data. For a set of countries (see data section) the rotating structure of the survey implies that we only observe one transition per individual and thus we cannot estimate the initial conditions static logit equation. But even for those for which the panel data cover more than two years, estimating the initial condition has proven difficult. Given the available individual characteristics, the model yielded several insignificant coefficients of the first stage and thus was not able to properly account for the selection of workers in different states (e.g. formal and informal as well as informal and unemployment). As often stressed, a poor initial equation specification may actually induce an unknown bias in the estimation of the dynamic multinomial logit rather than improve the results. For this reason, we have not implemented the two stage procedure.

However, given the limitation of the multinomial logit estimates, we are using the predicted transition probabilities only in a sensitivity analysis for the observed transitions. Together, the different transition matrices (P's) and the multinomial logit analysis provide an overall view of labor market dynamics.

2.3 *Estimating earnings differentials and effects of labor mobility*

The second main step of our analysis is to look at how the transition from one job to another affects individual earnings. the changes in their earnings when they change job.

To control for unobserved individual characteristics, we also run the following specification of the wage equations for the sub sample of workers that experienced a change in job in the period observed by the data:

$$(7) \quad \Delta \ln(w_{mt}) = \alpha + \sum_{i=1}^J \sum_{j=1}^J \beta_{ij} (S_{mi(t)} \cdot S_{mj(t-1)}) + \sum_{i=1}^J \sum_{j=1}^J \delta_{ij} (S_{mi(t)} \cdot S_{mj(t-1)}) X_{mt} + \gamma X_{mt} + \sum_{t=2}^T \varphi_t D_t + \varepsilon_{it}$$

Where w is the hourly wage; S represents the state in the labor market, X is a vector of individual characteristics that are assumed to affect not only the status in the labor market at any point in time, but also the probability of moving across states in the labor market; D are time dummies and e is the *iid* error term. Individual and job characteristics include age and age squared, education, occupation and industry (vector X_{mt}).

To assess the effect of a job switch on earnings we predict the mean change in hourly earnings associated with changes in employment. However, this estimate does not take into account the change in earnings that may have occurred among those workers who

³ See Chay and Hyslop (2000) and Gong and van Soets (2001) for a discussion on how to deal with the initial conditions.

remained in the origin state. To properly assess the effect of transition we thus compute a difference in difference estimate as follows:

$$(8) \quad \Delta\Delta w = \Delta w_{ik} - \Delta w_{ii}$$

Where Δw_{ik} is the predicted wage change for a worker switching from state i in period $t-1$ to sector k in period t and Δw_{ii} is the predicted wage change for workers remaining in state i .

3. Data and stylized facts

3.1 The longitudinal data for the study of labor transitions

We perform a comparative analysis of labor mobility in nine countries, six from Eastern Europe and the Former Soviet Union (Albania, Georgia, Hungary and Poland and Ukraine) and three from Latin America (Argentina, Mexico and Venezuela). The countries were selected on the basis of availability of longitudinal data and the possibility of identifying different forms of employment, in particular those with and without affiliation to social security and with written contracts. Table 1 provides the main sources of the longitudinal data. Some differences among surveys are noteworthy. In Argentina and Mexico, data are collected only in urban areas. We analyze transitions across one-year periods, as this periodicity is commonly available. One exception is Georgia where the longest time period between interviews is 9 months. When more than two years of data are examined for a country, an individual can, in theory, contribute multiple transitions, but we only consider one transition (the first) per person in the analysis.

As it is standard in panel data analysis, some attrition exists such that not all households can be re-interviewed in subsequent periods (Peracchi and Welch, 1995). Attrition however does not alter the composition of the linked sample relative to the cross section.

3.2. Definition of variables

In our analysis, we consider six different statuses on the labor market: out of labor force, unemployed, formal employees, informal employees, self-employed and farmers. Individuals not belonging to any of these categories (for example employers or cooperative members) are excluded, as the number of observations is not sufficient to perform a sensible dynamic analysis. The definitions are as consistent as possible across countries. Individuals are out of the labor force when they did not work during the week before the survey, and did not look for a job in the previous two weeks. Unemployed are those who did not work in the last week, but had looked for a job. Formal employees are those who receive a salary and are entitled to social security benefits; in some cases, when information about social security is not available, formality is defined on the base of existence of a written (and sometimes registered) contract, and of the regularity of the job. Employees are considered informal when not entitled to social security benefits, or

employed on the base of oral agreement, or with written agreement but casual job.⁴ Self-employed are entrepreneurs, businessmen without employees or persons engaged in professional activities; unpaid family worker in such activities are also included in this category. Self-employed and unpaid workers are further split into workers in agricultural activities and not.

In some countries, the category of agricultural self-employed is not available. In Argentina and Mexico, this is due to the urban nature of data. In Hungary, agricultural self-employed were too few to be included as a separate category, and therefore were not considered in the analysis. In Ukraine, both agricultural and non-agricultural self-employed were very few, and we have combined them into a single group of self-employed.

3.3 A diversified set of countries with different macroeconomic performance

While an examination of the interaction of transition behavior and business cycles is beyond the scope of the paper it is nonetheless informative to consider the macroeconomic performance of each country during the period analyzed. Table 2 reports the time span considered for each country, as well as some basic macroeconomic indicators. Not surprisingly, the nine countries experienced strikingly different trends. Albania and Georgia had the lowest per capita income of the group, with incomes of 4,300 and 1,700 USD (PPP, 2000) respectively but experienced strong GDP growth over the two year period studied as well as in the previous 3 years. Ukraine had similar GDP per capita levels in the period observed by the data. Hungary and Poland are higher income countries but also experienced very different patterns of growth. Hungary underwent in the period observed by the data a major restructuring process, while Poland had higher growth in the early 2000s.

The three Latin American countries experienced considerable volatility during the period of study. An exceedingly volatile period is covered by the Venezuelan data: in the period 1995-2002, Venezuela experienced major swings in growth from the 10% per annum growth in 1995-1998, to the sudden decline of about 10% in 1999 and the subsequent recovery in 2001 by 8% and the fall in 2002 of another 12%. At the same time, although Argentina had the highest per capita income among the countries, the period covered by the analysis (1995-2001) was not stellar economically. The severe economic crisis officially began in 2001, although it was preceded since 1998 by slow growth and mounting debt. Average annual growth was less than 1% over the period 1995-2001 although it had been 7.9% in the previous 3 years. Mexico also had its share of volatility over 1990-2001. The peso crisis occurred in 1995, with GDP declining by 6%. However this was followed by strong growth of 5% annually such that the period as a whole had an average growth rate of 3.3%.

⁴ In Poland, the variable social security registration could not be identified in the survey. We instead identify the status formal employment on the basis of whether the worker has a permanent contract, while informal employment refers to jobs under fixed-term and temporary contracts. While such definition is not strictly comparable to that of the other countries, it is often the case that temporary workers are not registered to social security.

Trade openness increased substantially in most countries during the period of study. This was particularly true in Eastern European countries, which, with the exception of Albania, underwent rapid growth in trade as percentage of GDP. Trade openness also increased in Latin America, albeit to a lower extent. The fastest growth was in Argentina, although from a low base of 16 percent of GDP in 1995.

3.4 Labor market status of individuals

Table 3 reports the share of individuals in working age (15-64 years old) in each labor market status per country. A diverse picture emerges both within and across the countries. Approximately one-third of the individuals are not participating in the labor force, ranging from 29% in Albania to 41% in Mexico. Unemployment varies significantly across the countries. The Table presents the unemployed divided by the total working age population. It shows that only about 3% of those in working age are unemployed in Mexico, but the percentage reach about 12% in Georgia and Poland.. Formal sector workers comprise a large share of the population in Hungary, with approximately half of the population in formal sector employment, whereas a much smaller percentage of the population is represented in this sector in Venezuela and Albania (21% and 14%). In comparison to their formal sector counterparts, informal wage earners comprise a much smaller share of the population in all countries. This sector is approximately half the size of the formal sector in Argentina and Mexico, and even relatively smaller in Georgia, Hungary, Poland and the Ukraine. The informal wage sector comes closest in size to the formal sector in Albania and Venezuela. Self-employed workers in non-agricultural jobs represent 10% or less of the population in all countries. However in the countries for which information on self-employment in agricultural sectors is available (Venezuela, Albania, Georgia and Poland), it comprises between 15-30% of the sample, except for Poland at 10%.

Table 4 provides a detailed analysis of the characteristics of the working age population in each country. The table shows major differences in the individual and household characteristics of individuals in different status in the labor market. The share of the population that is not participating in the labor market is disproportionately female, especially in Mexico, Venezuela, Argentina and Albania, where at least 70% of the non-economically active group is female. Poland shows the most gender equality for the non-economically active group with 59% comprised by women. The fact that household headship is a mutable category, especially in Latin America where multigenerational families are common, is reflected in the table. Indeed, whereas between 15-33% of the non-economically active are household heads in the Eastern European countries, the level is much lower ranging from 8-12% in the Latin American countries. This likely reflects larger family size in LAC as well as a propensity to name an income-earner as the head when available.

With the exception of Hungary and the Ukraine, informal sector workers are more likely to have children present in their households. In most countries own-account workers in non-agricultural jobs were also more likely to have children present in the household than formal wage employees (with the exception of Hungary and Poland).

The strong link between education and formal sector employment emerges strongly from Table 4. Formal sector has a larger share of workers with the highest education level than any other sector does. This is particularly the case for Albania in which, 32% of formal wage employees have the highest level of education whereas less than 10% have that level within each of the other statuses.

In the descriptive data it is not the case that wage employees in the informal sector are more likely to be female than wage employees in the formal sector. Argentina is the only country for which the pattern commonly expected appears. In Georgia, Hungary, Poland and the Ukraine women have attained gender parity in terms of being represented in the formal sector. In Mexico and Venezuela women comprise a higher share of the formal sector than they do in the informal sector.

Higher unemployment rates for women are an oft-cited empirical regularity in economic literature for Latin America as well as Eastern Europe. Notwithstanding these findings, the unemployed are more likely to be male in all countries studied except Poland. Although women make up close to half the unemployed in Argentina, Albania, Georgia and the Ukraine, in Venezuela, women represent a relatively small share of the unemployed (30%).

The composition of employment by industrial sector varies substantially across the job classifications. There is a much higher share in service industries for informal workers than for formal workers in all eight countries. Likewise the share of workers in public sector employment is higher for formal sector workers than informal sector wages with the only exception being Mexico.

4. Empirical results: mobility and tendencies in the labor markets

4.1 Overall mobility

In this section we report the results of computing the aggregate mobility indicators, *MD* and *MT* described above. Since in most of the countries under analysis we have 5 labor market statuses rather than six, for comparability reasons, when we had 6 statuses we collapsed the rows and columns that correspond to self-employment (agriculture and non-agriculture). Results are presented in Table 5, where the second panel presents results based on data for 6 statuses for Albania, Georgia, Poland and Venezuela.

Greater labor market mobility in Latin America than in transition economies

As stressed in the methodological section, both indicators of mobility (*MT* and *MD*) will be zero in case of perfect immobility and one if all workers were to change status every year. As shown in the table, in all countries there is a relatively high degree of mobility. From a cross-country perspective, Latin American countries (Argentina, Mexico, and Venezuela) show a higher degree of mobility than the transition economies of Eastern Europe and the Former Soviet Union (Albania, Georgia, Hungary, Poland and Ukraine). The result for Latin America is consistent with previous evidence that pointed to high mobility in and out of the labor market and across jobs within the labor market in the

region.⁵ However, the results are rather puzzling for the ECA countries in light of the massive restructuring that took place in these countries during their transformation from central planning to market economies.⁶ In order to shed light on the factors behind the different degree of mobility in the labor market we need to look at the different states in the labor market. Table 6 presents evidence on the persistence in each state in the labor market defined as the likelihood of being observed in state j in $t+1$ conditional on having been observed on the same state j in period t (the elements of the diagonal of the P matrix).

...because of differences in the entry in -- and exit from -- the labor market

One of the reasons behind cross-country differences in the overall mobility in the labor market is due to flows in and out of the labor market. In all countries, the probability of remaining out of the labor force for those of working age is high. But while it is generally below 80 percent in Latin America and the transition economies, it reaches 90 percent in Poland, a country where the unemployment rate is very high and job opportunities for those out the labor market are limited.

...and differences in the persistence of unemployment

Another factor that affects significantly the overall measure of mobility in the labor market is the duration of unemployment. In general, unemployment tends to be a more stagnant pool in transition economies than in Latin America, although large differences exist. Thus, Georgia and especially Poland show higher degrees of unemployment persistence than the other transition economies (e.g. in Poland more than 50 percent of the unemployment have a jobless duration longer than one year). And Argentina has a degree of unemployment persistence that is more than double that of Venezuela and especially Mexico and close to the average of the transition economies.

Jobs in the formal wage sector are more stable than those in self-employment and especially those in the informal wage sector

Job stability also varies significantly across types of activities. Formal salaried workers enjoy the highest degree of job stability in all countries. By contrast, informal salaried workers are exposed to a much higher instability in their job. This low persistence of informal employment may reflect a high inherent volatility of informal activities (i.e. the probability that an informal job be hit by a shock and the employment relationship is severed) and/or the low willingness of workers to stay in such type of jobs.

It is interesting to notice, that self-employment activities tend to enjoy an intermediate level of job stability – in between formal and informal wage employment. However, within self-employment there are also noticeable differences between those in agriculture and those in other sectors. Own-account activities in agriculture tend to be more stable

⁵ See e.g. IADB (2003).

⁶ It is however, consistent with previous analyses that highlighted the limited mobility in particular in and out of unemployment. See e.g. Boeri and Terrell (2002) as well as World Bank (2005).

than those other economic sectors, where workers have greater opportunities to shift from independent to dependent employment and vice versa.

In conclusion, according to these indicators, LAC countries exhibit a higher degree of mobility than the transition economies. This is partly explained by greater mobility in and out of the labor force – which in turn is also due to the higher share of youth in total working age population who tend to move back and forth from education to work –⁷ as well as lower persistence in unemployment. Persistence in different employment states rank similarly across countries: highest in “wage formality”, lowest in “wage informality”, with “self-employment” in an intermediate position. In the next sections, we focus on mobility across the different states in the labor market.

4.2 Observed mobility across different labor market status

Unemployment is the most common entry point in the labor market

In all the countries in our sample 80% of the individuals out of the labor force in t remain so in $t+1$. Interestingly, the destination of those moving into the labor market varies a lot across countries, largely depending on the size of the different sectors in the labor market but also market selection (Table 7). Unemployment tends to be the most frequent entry point in some of the more developed transition economies (e.g. Hungary and Poland), while self-employment in agriculture was the most common entry point in the low income transition economies (Albania and Georgia). In Latin America, most entrants into the labor market move straight into a job, most of the time in the informal economy or in self-employment. Only Argentina shows a high proportion of new entrants moving into unemployment. The only common pattern across countries is that formal employment is not the most likely entry point in the labor market.

Unemployed workers have a higher tendency to leave the labor force than to enter into a job.

It is also noticeable that around a quarter of the unemployed drop out of the labor force the next period. This is partially due to the fact that many young individuals cycle back and forth from inactivity and the labor market while still involved in education (see Borgarello *et al.* 2006). But it also reflects the fact that many of those in unemployment may lose hope to find a job and move back into inactivity. Among those in employment, informal wage employees and the self-employed are more likely to drop from the labor force than formal wage employees. The percentage is noticeably higher for our LAC countries (around 14%) relative to ECA. The exception is Hungary where 18% of wage informal drop from the labor force.

For those who stay in the labor market the length of job search varies a lot across countries and tends to be longer in transition economies than in the Latin American context (with the exception of Argentina). Bearing in mind the differences in the persistence in unemployment, in almost all the countries in our sample wage informality

⁷ See Borgarello, Duryea, Olgiati and Scarpetta (2006) for evidence of mobility in and out of the labor market among the youths.

and self-employment are the most likely destinations for those who find a job. Exceptions are Hungary (and to a limited extent Mexico) where unemployed workers who find a job are most likely to move to wage formality.

Unemployment and out of the labor force are two highly integrated states in the labor market

We have shown that out of the labor force workers tend to enter the labor force via unemployment, and that at the same time, unemployed workers have a higher tendency to exit unemployment than to enter into a job. The former suggest that movements between unemployment and out of the labor force are highly integrated.

Formal employees have a higher tendency to move to unemployment than informal ones

While a large number of workers enter employment through an informal job, given the precariousness of many of these jobs, many workers also cycle back into unemployment from the informal sector. Many workers in wage informality will lose their job each period, and they are more likely to move into unemployment than any other worker (the only exception being Ukraine where self-employment is the most likely source).

4.3 Mobility across Jobs

Mobility between salaried jobs is much higher than mobility between salaried jobs and self-employment.

It is quite remarkable that with the exception of Albania, conditional on exiting an informal job *the most likely destiny is a formal job*, above the probability of moving to unemployment, self-employment or out of the labor market. Of course, this only reflects transitions between one year and the year after. Workers may have spent some intermediate time in unemployment or other states but we cannot observe it. It is quite interesting however that exit to self-employment from informal salaried jobs is less prevalent than exit to formal sector jobs. Strong preference for formal jobs –relative to self-employment--, cumbersome firm entry regulations, or lack of access to capital may explain why many workers who are displaced or quit informal jobs end up in formal salaried employment

Workers who exit formal jobs are, in all cases, much more likely to move to an informal salaried job than to self-employment

This suggests that preferences for salaried jobs, regulations for firm creation or capital access may limit entry into self-employment. It is also noticeable that in countries with well established safety nets (such as Poland and Hungary) workers are more likely to move to unemployment rather than to an informal job.

What about mobility out of self-employment? The results here are quite diverse: In three out of nine countries (Albania, Argentina, Ukraine) workers who exit self-employment are more likely to end up in an informal salaried job than in any other status; In Hungary they are more likely to move to a formal job, while in Poland they are more likely to go

to unemployment than to any other destination; In Mexico and Venezuela they are more likely to exit the labor force, closely followed by moving to the informal sector. Instead, in Georgia, workers who exit self-employment in non-agricultural activities are more likely to become self-employed in agricultural activities (farmers). It is however quite noticeable that in all countries *the probability of moving to a formal job is much higher for workers who exit informal salaried activities than for workers who exit self-employment.*

What drives the mobility patterns across sectors?

The next step in our analysis is to look deeper into the possible factors behind the observed stronger integration between formal and informal wage employment compared with self-employment and the apparent greater attractiveness of informal employment in Latin America compared with transition economies. In particular, we want to assess the role of differences in individual characteristics of workers in shaping labor mobility. Thus, higher flows between the two wage employment sectors may simply reflect individual preferences that select individuals with higher risk aversion into salaried employment and individuals with greater preferences for independency into self-employment. Moreover, institutional or market factors may induce wage differences in the three sectors so as to influence individual preferences.

Figure 1 compares the observed transition probabilities across the different states in the labor market and those estimated through the dynamic *multinomial logit* discussed in the previous section. The first point to notice is that, with some exceptions (e.g. the transition from self-employment to informality in Venezuela), controlling for individual characteristics does not affect significantly the estimated transition probabilities. In addition, the small differences between observed and predicted transition probability suggest that individual characteristics of workers in different sectors generally reduce flows from informality to formality as well as from formality to informality. In other words, were individuals in the two states the same we would have observed even larger mobility between them. In particular, such characteristics make some workers less apt to move from informal to formal jobs than would have been otherwise possible, while their effects on the transition in the opposite direction are very small. The same would apply to transitions from self-employment to informality in a number of cases, but not transitions from informality to self-employment. No clear patterns can be detected on the changes in transition probabilities between formal and self-employment and vice versa.

All in all, we can tentatively conclude that differences in the composition of workers in different sectors of the economy do not seem to play a major role in shaping the observed mobility patterns. If anything, differences in the compositions of workers in self-employment and informality seem to affect the interactions between these two sectors. Contrary to what one could have expected, even controlling for individual characteristics does not change significantly the patterns of mobility between self-employment and formal wage employment.

5. Position in the earnings distribution and labor mobility

In the previous section we presented evidence of close interactions between formal and informal wage employment compared with self-employed and that personal characteristics do not have a major effect in shaping these patterns. We now move to the question of how the position of individual on the earnings distribution within each status influences the probability of moving between different states. To address this issue we disaggregate the P transition matrices by position (quintiles) in the earnings distribution of the origin state. Given data limitation we perform these analyses for the three LAC countries for which we have enough observations.

The lowest paid formal workers move relatively more to wage informality, while the highest paid wage informal workers tend to move more to formality

In the three LAC countries we found some evidence that the probability of moving from formality to wage informality decreases across quintiles of the earning distributions of wage formality (Table 8). Interestingly, the pattern reverses itself for the opposite movement: the highest paid wage informal workers have the highest probability of moving into formality.⁸ In other words, workers that are doing relatively poorly in wage formality tend to move more to wage informality than the rest, while workers who are doing better in wage informality are the ones who tend to move to formality. Formality in this sense appears to be a preferred status for higher earning informal wage workers, a finding that will be further confirmed in our analysis of the wage variation associated to status changes in the next section.

The self-employed with higher earnings tend to move more than the rest towards wage formality, while there is no clear pattern for the opposite movement.

Though the pattern here is not as clear as in the case of movements from wage informality, there is some evidence that the better positioned self-employed tend to move more towards formality than their lower earning counterparts. However, these results should be interpreted with caution given the few observation with which we count in this case.

The better paid wage informal workers tend to move more to self-employment, while there is no clear pattern for the opposite movement.

Both the changes in the probability of transition and the regression results suggest that the better paid wage informal workers tend to move to self-employment more than the rest, suggesting that self-employment is not a refugee status for those workers who cannot find a job in wage informality. There is no clear pattern for the transitions from self-employment to wage informality.

⁸ We also perform a regression analysis of the probability of being observed in status i as a function of the previous period status by itself and interacted with the position of the worker in the earnings distribution in her previous status. The results suggest that the increase of the probability of moving from wage informality to formality across quintiles is statistically significant in both Mexico and Venezuela, while it is of the right sign but non significant in the case of Argentina. The reverse pattern (from formality to informality) is significant only in Mexico.

All in all, there is a clear evidence of negative selection for those moving from formal to informal jobs and self-employment while individuals with higher than average earnings tend to move to formal employment.

6. Wage changes associated with labor market transitions

The next step in our assessment entails the analysis of earnings changes among workers affected by labor mobility. We start by simply looking at both the observed wage changes and the projected changes obtained through wage equation.

In LAC countries, workers who move from formal to informal salaried jobs suffer a decline in wages (relative to workers who remain in formal salaried jobs).

Table 10 suggests that in Latin America, workers who move from formal to informal salaried jobs experience a decline in monthly wages while the reverse move entails an increase in wages. These results are unchanged if we use hourly earnings instead of monthly earnings in the wage equations, with the exception of Argentina. In the latter country, workers who move to informal salaried jobs experience a decline in monthly earnings but an increase in hourly earnings, indicating a reduction in the hours of work when switching from formal to informal salaried jobs.

The evidence is more ambiguous for ECA countries.

Within the transition economies, the results are less clear cut. Switching from formal to informal salaried jobs implies a decline (relative to workers who stay in formal salaried jobs) in monthly earnings in Albania but an increase in monthly earnings in Georgia and Poland. The findings for Poland are somewhat surprising since in this country, the category of informal salaried jobs refers to temporary salaried jobs. The results would indicate that workers hired under temporary contracts obtain some monetary compensation for the lack of job security associated with this type of contractual arrangements.

Another puzzling finding for ECA is that in three countries, workers either always gain, or always lose from switching between formal and informal jobs. So for example, while in Poland, workers who move from permanent to temporary jobs experience an increase in monthly and hourly earnings, workers who move from temporary to permanent jobs also experience a gain. The same surprising findings are encountered in Albania. In the latter country, workers always lose out of transitions regardless of the direction of the move. The low number of observations from which these estimates are made may account for such contradictory results.

A comparison between the median starting wages of workers who stay in their job with that of workers who switch jobs may help us detect whether job switchers are a selected sample of the overall population. In all countries, with the exception of Albania and Georgia, the average wage of workers in formal salaried jobs who stay in their job is higher than that of those who switch to informal salaried jobs. Significantly, the opposite is the case for workers who switch from informal to formal salaried jobs: in most countries, the average starting wage of switchers is higher than the average wage of

stayers. This is consistent with the fact that workers who switch from formal to informal salaried jobs tend to belong to the lower part of the distribution of formal sector workers, while those who switch from informal to formal salaried jobs start from a relatively higher position within the informal sector (see previous section). It may also imply that an average worker who was randomly transfer from a formal to an informal job is likely to experience a higher wage loss than the one measured here for most countries.

Large heterogeneity

Even in countries where, on average, workers moving from a formal to an informal salaried job register a decline in earnings, a substantial share of workers experience wage increases associated to the change. For example, in Argentina, 43 percent of the workers who move from the formal to the informal sector experienced a wage increase. The corresponding numbers for Mexico, Albania and Venezuela are 44, 37 and 35 percent, respectively. In the same manner, despite that in many countries moving to an informal salaried job entails a loss of earnings, a large number of workers experience wage gains. For example, in Venezuela, 35 percent of the workers who switch from a formal to an informal wage job experience a gain in wages, even if on average job switchers lose.

The earnings consequences of switching between formal salaried and self-employed jobs vary across countries.

In Mexico and Venezuela, moving from a formal salaried job to self-employment activities implies, on average, a decline in monthly earnings (relative to those who remain in the original status), while the opposite move brings an increase. In Mexico, however, switching from a salaried job to self-employment is associated with an increase in hourly earnings, indicating that on average hours of work tend to be higher in formal salaried jobs. Finally, in Argentina, switching from formal salaried to self-employment is associated with an increase in monthly and hourly earnings. However, a move from self-employment to a formal salaried is also associated with higher monthly earnings. In Albania, the estimates suggest that self-employment activities command higher earnings than salaried activities. However, such results are based on an unreliable low number of observations.

A comparison of earnings in the original status between movers and stayers, indicates that workers who transit from formal salaried jobs to self-employment tend to earn less than workers who remain in formal salaried jobs. Instead, as we discussed in the previous section, workers who transit from self-employment to salaried formal jobs tend to come from the upper part of the distribution of earnings of self-employment.

Workers who move from informal salaried jobs to self-employment experience an increase in earnings

In the countries for which a sufficient number of observations on transitions from salaried informal jobs to self-employment are available, the evidence suggests that such move leads to an increase in monthly and hourly earnings. The opposite transition tends to lead to a decline in earnings but not in all cases. For example, in Venezuela, workers who

transit from self-employment to salaried informal jobs experience a decline in monthly earnings but an increase in hourly earnings, suggesting that part of the reason earnings are higher in self-employment is due to more hours of work. In Albania, and Argentina, however, a move from self-employment to a salaried informal job is associated with a decline in hourly earnings but an increase in monthly earnings, suggesting longer hours in salaried jobs.

A comparison of the initial average earnings of movers versus those who stay confirms the pattern of movements that we found in the previous section: informal salaried workers who move to self-employment belong to the upper part of the distribution of earnings in informal salaried jobs. Conversely, even though the evidence here is weaker, those workers who move from self-employment to informal salaried jobs tend to belong in the lower part of the distribution of earnings in self-employment.

7. Conclusions

This paper has examined the degree of labor mobility and associated wage changes in a sample of Latin American and transition economies of Eastern Europe and the Former Soviet Union using longitudinal data and constructing comparable variables across countries. We focus on mobility in and out of the labor market as well as within the labor market between unemployment and employment and across different types of jobs.

Overall, the analysis suggests a complex picture of workers' mobility in the labor market. Despite the deep restructuring process that took place in the transition economies during the past decade, we found labor mobility to be lower in these countries compared with Latin American countries. Part of the explanation is due to the large mobility in and out of the labor market in Latin America compared with the transition economies, but also due to the greater mobility across jobs. Mobility is quite high not only in and out of the labor market but also across different types of jobs. Contrary to what is commonly suggested, informal salaried workers are more likely to transit to unemployment than formal salaried workers. This is at least partly explained by the much lower stability of informal salaried jobs, relative to formal salaried employment. Within jobs, mobility between wage employment (formal-informal) is higher than between wage employment and self-employment, suggesting that barriers to entry into self-employment or strong preferences for salaried employment reduce flows into self-employment. For workers who leave self-employment, informal jobs, unemployment or exiting the labor force tend to be more common transitions than getting into a formal job.

The data also suggest important earning consequences of transitions. In some countries, there is evidence than on average workers who move from formal to informal employment experience earning losses. Yet in some of the transition economies, switching from formal to informal jobs improves workers' earnings. Similarly, for many, switching to self-employment is a way to improve earnings, particularly for wage informal workers. Within countries, there is significant individual heterogeneity in earnings changes associated with mobility: Even when on average workers lose earnings from switching across certain statuses, many workers gain in that process. Finally, there is evidence of selection among switchers: The data suggests that those who switch from

formal to informal salaried activities are negatively selected; that is to say, they belong to the lower part of the earnings distribution of formal workers, while the reverse is true for workers moving from an informal to a formal wage job. This would suggest that mobility between the two states is not open to, or desirable for, all workers. Nonetheless, we find that in several countries a move from a formal to an informal salaried job entails – on average -- a reduction in wages (relative to those who stay), however such loss is quite small. There is also some evidence of positive selection in the transitions to self-employment: job movers to self-employment tend to come from the lower part of the distribution of formal salaried workers, while they belong to the higher part of the distribution of informal salaried workers. Moreover, job movers to formal wage employment tend to come from the upper part of the self-employed earnings distribution.

These results do not give strong support to a traditional view of informality and self-employment in which these are jobs of last resort. However, they confirm previous theoretical and empirical analyses that pointed to wide heterogeneity within the informality and self-employment sectors. Some workers, with higher skills and earnings potentials have high probabilities of moving from informality and to a lesser extent self-employment into formal jobs, while movements in the opposite direction tend to concentrate among the low skilled, who often also experience a wage loss. For the low skilled informal workers the probability of moving into a formal job is very limited and transitions are more to inactivity. There is also a clear role for policies: some of the differences between Latin America and the transition economies in the size and patterns of mobility are due to the presence of unemployment benefits that allow workers to seek for good jobs. However, high employment protection, especially in the transition economies, is also likely to explain the lower mobility in and out of formal employment. These are issues that deserve a closer look in further analysis of labor mobility.

References

- Bartelsman, Eric J. and Mark Doms (2000). "Understanding Productivity: Lessons from Longitudinal Microdata." *Journal of Economic Literature* 38(3), pp. 569-95.
- Eric J. Bartelsman, John C. Haltiwanger, and Stefano Scarpetta. Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries. Working Paper 3464, World Bank, December 2004.
- Boeri, Tito, and Katherine Terrell. 2002. "Institutional Determinants of Labor Reallocation in Transition." *Journal of Economic Perspectives* 16 (1, Winter): 51–76.
- Borgarello, Andrea, Suzanne Durjea, Analia Olgiati and Stefano Scarpetta, 2006. "Informal jobs for youth: Stepping stones or traps", mimeo.
- Caves, R.E. (1998). "Industrial Organization and New Findings on the Turnover and Mobility of Firms." *Journal of Economic Literature* 36:4, pp. 1947-82.
- Chay, Kenneth Y. (2000?) Identification and Estimation of Dynamic Binary Response Panel Data Models: Empirical Evidence Using Alternative Approaches University of California, Berkeley, The Center for Labor Economics Working Paper: 5
- Davis, Steven and John Haltiwanger: "On the Driving Forces Behind Cyclical Movements in Employment and Job Reallocation," *American Economic Review*, Vol. 89, No. 5, December 1999, pp. 1234-1258.
- Eslava, Marcela, John Haltiwanger, Adriana Kugler and Maurice Kugler, 2005. "[Factor Adjustments After Deregulation: Panel Evidence from Colombian Plants](#)," [NBER Working Papers](#) 11656, National Bureau of Economic Research. Cambridge.
- Fernandes, Ana M. (2002) "Trade Policy, Trade Volumes and Plant-level Productivity in Colombian Manufacturing Industries". Policy Research Working Paper Series 3064. The World Bank. Washington DC
- Greene, William 1981, Sample Selection Bias as a Specification Error: A Comment, *Econometrica*, Vol. 49, No. 3 (May) , 795-798
- Gong, Xiaodong, and Arthur van Soest, (2002) Wage differentials and mobility in the urban labor market: A panel data analysis for Mexico, *Labour Economics*, 9(4), 513-529.
- Gong, Xiaodong, Arthur van Soest, and Elizabeth Villagomez (2004) Mobility in the Urban Labor Market: A Panel Data Analysis for Mexico, *Economic Development and Cultural Change*, volume 53, pages 1–36
- Haltiwanger, J.C. A. Kugler, M. Kugler, A. Micco and C. Pagés (2004). "Effects of Tariffs and Real Exchange Rates on Job Reallocation: Evidence from Latin America" *Journal of Policy Reform*, December 2004, Vol. 7(4), pp. 201–218
- Heckman, James J. 1979. "[Sample Selection Bias as a Specification Error](#)", *Econometrica* v47, n1 153-61
- Heckman, James, 1981. Statistical models for discrete panel data: in C. Manski and D. McFadden (eds.), *Structural Analysis of discrete data with econometric applications*", Cambridge, MIT Press..
- IADB, 2003. "Good Jobs Wanted: Labor Markets in Latin America" Inter American Development Bank, Washington D.C.

- Lee, Lung-Fei, 1982. "Some Approaches to the Correction of Selectivity Bias", Review of Economic Studies v49, n3 355-72
- Lee, Lung-Fei, 1983. "Generalized Econometric Models with Selectivity", Econometrica v51, n2 (March 1983): 507-12
- Maddala, G.S. 1983. *Limited-Dependent and Qualitative Variables in Econometrics*. Econometric Society Monographs in Quantitative Economics. Cambridge, Cambridge University Press.
- Maloney, William F. 1999. "Does Informality Imply Segmentation in Urban Labor Markets? Evidence from Sectoral Transitions in Mexico", World Bank Economic Review 13, 275-302.
- Maloney, William F. 2003. "Informal Self-Employment: Poverty Trap or Decent Alternative," in *Pathways out of Poverty*. Gary S Fields and Guy Pfeffermann eds. Maloney, William and Bosch 2006. "Gross Worker Flows in the Presence of Informal Labor Markets. The Mexican Experience 1987-2002,
- Pagés, Carmen and Marco Stampini "Skill level, Mobility and Labor Market Duality: Evidence from Latin America and Transition Economies". Mimeo Washington DC.
- Pavnick, Nina. 2002. "Trade Liberalization, Exit and Productivity Improvements: Evidence from Chilean Plants," Review of Economic Studies, 69(1): 245-276.
- Peracchi, Franco and Welch, Finis, 1995. "How representative are matched cross-sections? Evidence from the Current Population Survey," *Journal of Econometrics*, Elsevier, vol. 68(1), pages 153-179, July.
- Schneider, Friedrich, 2004. "The Size of the Shadow Economies of 145 Countries all over the World: First Results over the Period 1999 to 2003," IZA Discussion Papers 1431, Institute for the Study of Labor (IZA).
- World Bank. 2005. "Enhancing Jobs Opportunities in Eastern Europe and the Former Soviet Union", World Bank, Washington D.C..

Table 1: Data Sources

Country	Source of Data
Albania	Living Standard Measurement Study (LSMS) and the Albanian Panel Surveys (APS)
Argentina	Encuesta Permanente de Hogares (EPH-Permanent Household Survey)
Georgia	Labor Force Survey (LFS) and the Survey of Georgian Households (SGH)
Hungary	Hungarian Household Panel (HHP)
Mexico	Encuesta Nacional de Empleo Urbano (ENEU – Urban Employment National Survey)
Poland	Labor Force Survey
Ukraine	Ukrainian Longitudinal Monitoring Survey (ULMS)
Venezuela	Encuesta de Hogares por Muestreo (EHM – Household Survey by Sampling)

Table 2: Macroeconomic conditions and evolution

<u>Country</u>	<u>Period</u>	<u>GDP per capita PPP(constant 2000 US\$)</u>	<u>GDP growth (av(annual % change)</u>	<u>GDP growth (av(annual % change) in prev. 3 years</u>
Albania	2002-2004	4320	5.1	8.3
Argentina	1995-2001	12091	0.9	7.9
Georgia	1998-1999	1766	3.0	8.1
Hungary	1993-1997	10450	1.9	-6.2
Mexico	1990-2001	8163	3.2	2.3
Poland	2000-2002	10501	2.5	5.2
Ukraine	2003-2004	5544	10.7	6.8
Venezuela	1995-2002	5860	0.3	1.3

Source: World Bank, WDI database.

Table 3: Distribution of working age population by labor market status

	ARGENTINA	MEXICO	VENEZUELA	ALBANIA	GEORGIA	HUNGARY	POLAND	UKRAINE
Out of labor force	0.36	0.41	0.40	0.35	0.29	0.33	0.38	0.36
Unemployed	0.10	0.03	0.06	0.06	0.12	0.07	0.12	0.10
Formal Employees	0.28	0.30	0.21	0.14	0.26	0.51	0.34	0.45
Informal Employees	0.15	0.17	0.13	0.09	0.05	0.05	0.04	0.04
Self employed non-agric.	0.10	0.10	0.03	0.07	0.04	0.04	0.03	0.04
Self employed agric.			0.16	0.29	0.24		0.10	

Table 4: Characteristics of Workers by State

	ARGENTINA	MEXICO	VENEZUELA	ALBANIA	GEORGIA	HUNGARY	POLAND	UKRAINE
Out of the Labor Force								
N. observations	5565	137424	36240	4546	6401	4751	96330	4280
Age 15-24 (share)	0.422	0.409	0.515	0.393	0.389	0.201	0.413	0.349
Age 25-49 (share)	0.330	0.414	0.335	0.330	0.356	0.238	0.228	0.245
Age 50-64 (share)	0.248	0.177	0.149	0.277	0.255	0.560	0.359	0.406
Female (share)	0.742	0.794	0.723	0.702	0.685	0.617	0.591	0.647
Education1 (share)	0.010	0.052	0.070	0.167	0.016	0.063	0.473	
Education2 (share)	0.267	0.171	0.302	0.571	0.102	0.710	0.337	
Education3 (share)	0.147	0.702	0.521	0.227	0.515	0.190	0.156	
Education4 (share)	0.149	0.126	0.100	0.035	0.368	0.036	0.034	
Head (share)	0.118	0.088	0.083	0.156	0.175	0.333	0.240	0.305
Professional (share)	0.091	0.089	0.096					
Share of children in the household	0.187		0.300	0.191	0.165	0.459	3.253	0.097
Unemployed								
N. observations	1574	10044	5271	716	2581	1070	31421	1218
Age 15-24 (share)	0.370	0.530	0.417	0.324	0.168	0.197	0.275	0.260
Age 25-49 (share)	0.452	0.408	0.518	0.594	0.645	0.670	0.620	0.579
Age 50-64 (share)	0.178	0.062	0.066	0.082	0.188	0.133	0.105	0.162
Female (share)	0.453	0.420	0.297	0.435	0.433	0.423	0.496	0.478
Education1 (share)	0.005	0.028	0.026	0.069	0.007	0.018	0.191	
Education2 (share)	0.318	0.089	0.320	0.523	0.038	0.746	0.515	
Education3 (share)	0.192	0.701	0.505	0.370	0.390	0.204	0.250	
Education4 (share)	0.192	0.210	0.140	0.039	0.565	0.032	0.044	
Head (share)	0.332	0.229	0.234	0.257	0.285	0.414	0.206	0.445
Professional (share)		0.107	0.065					
Share of children in the household	0.179		0.290	0.209	0.168	0.895	3.266	0.118
Formal Wage Employees¹								
N. observations	4292	99813	19215	1839	5666	7272	85480	5391
Age 15-24 (share)	0.157	0.236	0.165	0.058	0.043	0.111	0.075	0.103
Age 25-49 (share)	0.642	0.668	0.704	0.739	0.673	0.744	0.754	0.647
Age 50-64 (share)	0.201	0.096	0.131	0.203	0.284	0.145	0.171	0.250
Female (share)	0.383	0.374	0.394	0.424	0.514	0.531	0.474	0.493
Education1 (share)	0.002	0.015	0.014	0.025	0.006	0.007	0.076	
Education2 (share)	0.206	0.078	0.223	0.220	0.020	0.504	0.400	
Education3 (share)	0.228	0.668	0.473	0.435	0.259	0.311	0.336	
Education4 (share)	0.377	0.254	0.269	0.320	0.715	0.179	0.188	
Share in agriculture	0.002	0.003	0.020	0.018	0.031	0.074	0.018	0.105
Share in industry	0.218	0.325	0.189	0.202	0.167	0.297	0.308	0.302
Share in construction	0.030	0.034	0.049	0.051	0.015	0.042	0.066	0.042
Share in services	0.386	0.277	0.274	0.232	0.279	0.289	0.340	0.270
Share in public sector	0.364	0.362	0.467	0.496	0.508	0.298	0.268	0.282
Public Ownership	0.232		0.407	0.739	0.873	0.563	1.512	0.699
Head (share)	0.530	0.485	0.416	0.463	0.384	0.490	0.504	0.526
Professional (share)	0.393	0.179	0.233	0.482	0.679	0.355	0.372	0.344
Share of children in the household	0.174		0.305	0.221	0.186	0.809	3.022	0.118

Table 4: Characteristics of Workers by State (Continued)

	ARGENTINA	MEXICO	VENEZUELA	ALBANIA	GEORGIA	HUNGARY	POLAND	UKRAINE
Informal Wage Employee								
N. observations	2316	57117	11585	1173	1086	785	10495	506
Age 15-24 (share)	0.325	0.343	0.400	0.157	0.067	0.281	0.280	0.269
Age 25-49 (share)	0.518	0.559	0.527	0.737	0.648	0.568	0.599	0.613
Age 50-64 (share)	0.157	0.098	0.073	0.106	0.285	0.150	0.121	0.118
Female (share)	0.442	0.358	0.288	0.206	0.396	0.398	0.434	0.457
Education1 (share)	0.009	0.036	0.054	0.064	0.013	0.020	0.156	
Education2 (share)	0.323	0.147	0.425	0.554	0.043	0.683	0.464	
Education3 (share)	0.168	0.680	0.419	0.335	0.573	0.247	0.265	
Education4 (share)	0.180	0.173	0.094	0.047	0.372	0.050	0.115	
Share in agriculture	0.004	0.009	0.159	0.111	0.081	0.003	0.040	0.136
Share in industry	0.223	0.155	0.120	0.164	0.221	0.197	0.265	0.161
Share in construction	0.098	0.078	0.127	0.356	0.068	0.141	0.135	0.145
Share in services	0.499	0.304	0.310	0.343	0.538	0.615	0.408	0.526
Share in public sector	0.176	0.454	0.284	0.026	0.093	0.045	0.151	0.033
Public Ownership	0.046		0.094	0.036	0.266	0.023	1.792	0.072
Head (share)	0.362	0.398	0.278	0.497	0.448	0.434	0.354	0.413
Professional (share)	0.162	0.136	0.072	0.052	0.154	0.109	0.178	0.050
Share of children in the household	0.192		0.315	0.268	0.199	0.738	3.190	0.117
Self-employed non-agriculture³								
N. observations	1568	33779	2571	908	822	506	6585	464
Age 15-24 (share)	0.106	0.127	0.320	0.081	0.044	0.113	0.066	0.146
Age 25-49 (share)	0.600	0.644	0.484	0.751	0.712	0.690	0.747	0.682
Age 50-64 (share)	0.294	0.229	0.196	0.169	0.244	0.196	0.186	0.172
Female (share)	0.367	0.398	0.037	0.288	0.371	0.351	0.330	0.376
Education1 (share)	0.009	0.069	0.228	0.050	0.010	0.009	0.074	
Education2 (share)	0.347	0.260	0.590	0.537	0.040	0.571	0.525	
Education3 (share)	0.181	0.665	0.167	0.380	0.639	0.359	0.360	
Education4 (share)	0.117	0.075	0.010	0.033	0.312	0.061	0.041	
Share in agriculture	0.000	0.000	0.953	0.000	0.000	0.000	0.000	0.354
Share in industry	0.149	0.119	0.003	0.109	0.124	0.063	0.115	0.041
Share in construction	0.204	0.049	0.000	0.145	0.042	0.070	0.148	0.093
Share in services	0.568	0.576	0.007	0.744	0.828	0.863	0.733	0.491
Share in public sector	0.078	0.255	0.037	0.001	0.007	0.003	0.004	0.021
Public Ownership	0.004		0.000	0.000	0.000	0.019		0.000
Head (share)	0.561	0.547	0.445	0.527	0.456	0.627	0.548	0.580
Professional (share)	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.467
Share of children in the household	0.208		0.320	0.267	0.200	0.703	3.084	0.139
Self-employed non-agriculture⁴								
N. observations			14632	3713	5187		24397	
Age 15-24 (share)			0.148	0.252	0.111		0.105	
Age 25-49 (share)			0.650	0.527	0.511		0.638	
Age 50-64 (share)			0.202	0.221	0.378		0.256	
Female (share)			0.425	0.571	0.512		0.461	
Education1 (share)			0.049	0.159	0.027		0.378	
Education2 (share)			0.432	0.678	0.104		0.452	
Education3 (share)			0.443	0.157	0.646		0.161	
Education4 (share)			0.067	0.006	0.223		0.009	
Share in agriculture			0.001	1.000	1.000		1.000	
Share in industry			0.131	0.000	0.000		0.000	
Share in construction			0.093	0.000	0.000		0.000	
Share in services			0.600	0.000	0.000		0.000	
Share in public sector			0.175	0.000	0.000		0.000	
Public Ownership			0.000	0.000	0.000			
Head (share)			0.421	0.290	0.320		0.389	
Professional (share)			0.000	0.000	0.000		0.001	
Share of children in the household			0.328	0.254	0.173		3.713	

Table 4: Characteristics of Workers by State (Continued)

Total								
N. observations	15315	338176	89513	12895	21743	14384	254708	11859
Age 15-24 (share)	0.291	0.320	0.348	0.258	0.177	0.158	0.232	0.213
Age 25-49 (share)	0.488	0.537	0.510	0.525	0.537	0.555	0.532	0.501
Age 50-64 (share)	0.221	0.142	0.142	0.217	0.287	0.287	0.235	0.286
Female (share)	0.526	0.538	0.497	0.537	0.543	0.538	0.512	0.538
Education1 (share)	0.007	0.039	0.054	0.123	0.015	0.027	0.262	
Education2 (share)	0.269	0.145	0.330	0.549	0.068	0.605	0.402	
Education3 (share)	0.182	0.682	0.472	0.262	0.473	0.260	0.243	
Education4 (share)	0.223	0.173	0.133	0.067	0.445	0.108	0.092	
Share in agriculture	0.002	0.006	0.100	0.524	0.444	0.067	0.180	0.125
Share in industry	0.205	0.233	0.143	0.084	0.098	0.280	0.244	0.271
Share in construction	0.078	0.051	0.081	0.083	0.015	0.048	0.065	0.054
Share in services	0.449	0.336	0.369	0.192	0.219	0.335	0.311	0.307
Share in public sector	0.265	0.374	0.307	0.118	0.225	0.270	0.200	0.243
Public Ownership	0.071	.	0.178	0.174	0.395	0.495	1.542	0.329
Head (share)	0.342	0.312	0.262	0.300	0.301	0.432	0.357	0.438
Professional (share)	0.258	0.136	0.111	0.118	0.300	0.324	0.277	0.328
Share of children in the household	0.185		0.308	0.228	0.177	0.690	3.203	0.112

Table 5: Aggregate mobility indicators

	MD	MT
Calculated on 5 states		
Argentina	0.572	0.514
México	0.664	0.572
Venezuela	0.607	0.549
Albania	0.514	0.465
Georgia	0.410	0.382
Poland	0.309	0.279
Hungary	0.508	0.469
Calculated on 6 states		
Venezuela	0.576	0.523
Albania	0.485	0.436
Georgia	0.429	0.403
Poland	0.277	0.249

Table 6: Persistence in each state
 (Measured as the elements of the main diagonal of P_{ij})

	Argentina	México	Venezuela	Albania	Georgia	Hungary	Poland	Ukraine
Out of lab force	0.784 (0.005)	0.805 (0.001)	0.785 (0.002)	0.751 (0.008)	0.777 (0.008)	0.838 (0.668)	0.899 (0.191)	0.762 (0.010)
Unemployed	0.308 (0.011)	0.120 (0.003)	0.251 (0.009)	0.292 (0.021)	0.505 (0.013)	0.393 (1.842)	0.668 (0.492)	0.332 (0.019)
Wage formal	0.837 (0.006)	0.750 (0.001)	0.749 (0.004)	0.830 (0.011)	0.890 (0.006)	0.863 (0.469)	0.901 (0.196)	0.861 (0.008)
Wage informal	0.477 (0.011)	0.471 (0.002)	0.394 (0.006)	0.483 (0.020)	0.459 (0.024)	0.403 (2.193)	0.493 (1.014)	0.467 (0.044)
Non-agr. self employed	0.538 (0.012)	0.566 (0.002)	0.577 (0.015)	0.686 (0.021)	0.523 (0.029)	0.628 (3.051)	0.856 (0.848)	0.500 (0.062)
Agricultural self employed	n.a.	n.a.	0.629 (0.005)	0.776 (0.008)	0.834 (0.009)	n.a.	0.940 (0.256)	n.a.

Bootstrapped standard errors in parenthesis.

Table 7: Transition Matrices (P Matrices)

	Labor Market Status						
ALBANIA	1	2	3	4	5	6	N
1 Out of labforce	0.75 (0.008)	0.05 (0.004)	0.02 (0.003)	0.04 (0.004)	0.02 (0.003)	0.11 (0.006)	2,899
2 Unemployed	0.34 (0.022)	0.29 (0.021)	0.06 (0.011)	0.16 (0.018)	0.08 (0.012)	0.07 (0.012)	493
3 Wage formal	0.05 (0.006)	0.02 (0.004)	0.83 (0.011)	0.06 (0.008)	0.02 (0.005)	0.02 (0.004)	1,126
4 Wage informal	0.09 (0.011)	0.05 (0.008)	0.14 (0.013)	0.48 (0.020)	0.17 (0.014)	0.06 (0.009)	729
5 Non-agricultural self employed / unpaid	0.08 (0.012)	0.02 (0.005)	0.04 (0.009)	0.12 (0.016)	0.69 (0.021)	0.05 (0.010)	513
6 Agricultural self employed / unpaid	0.15 (0.007)	0.01 (0.002)	0.01 (0.002)	0.04 (0.004)	0.02 (0.003)	0.78 (0.008)	2,614
Share in each labor market status	0.35	0.04	0.14	0.09	0.08	0.297114777	8,373
ARGENTINA	1	2	3	4	5	6	N
1 Out of labforce	0.78 (0.005)	0.08 (0.004)	0.03 (0.002)	0.07 (0.003)	0.04 (0.002)		5,823
2 Unemployed	0.26 (0.010)	0.31 (0.011)	0.11 (0.007)	0.22 (0.011)	0.11 (0.008)		1,579
3 Wage formal	0.03 (0.002)	0.05 (0.003)	0.84 (0.006)	0.07 (0.004)	0.02 (0.002)		4,231
4 Wage informal	0.14 (0.008)	0.12 (0.007)	0.14 (0.008)	0.48 (0.011)	0.12 (0.007)		2,123
5 Non-agricultural self employed / unpaid	0.13 (0.009)	0.10 (0.007)	0.05 (0.005)	0.20 (0.010)	0.54 (0.012)		1,553
6 Agricultural self employed / unpaid							
Share in each labor market status	0.36	0.10	0.28	0.15	0.10		15,309
GEORGIA	1	2	3	4	5	6	N
1 Out of labforce	0.78 (0.008)	0.07 (0.005)	0.02 (0.003)	0.02 (0.003)	0.01 (0.002)	0.10 (0.006)	3,197
2 Unemployed	0.24 (0.011)	0.50 (0.013)	0.07 (0.007)	0.06 (0.006)	0.04 (0.005)	0.08 (0.009)	1,404
3 Wage formal	0.03 (0.003)	0.02 (0.002)	0.89 (0.006)	0.03 (0.003)	0.01 (0.002)	0.03 (0.004)	2,650
4 Wage informal	0.05 (0.010)	0.04 (0.009)	0.26 (0.020)	0.46 (0.024)	0.06 (0.012)	0.13 (0.018)	457
5 Non-agricultural self employed / unpaid	0.06 (0.013)	0.03 (0.009)	0.07 (0.013)	0.12 (0.018)	0.52 (0.029)	0.21 (0.022)	394
6 Agricultural self employed / unpaid	0.07 (0.006)	0.02 (0.003)	0.03 (0.004)	0.02 (0.003)	0.03 (0.004)	0.83 (0.009)	2,607
Share in each labor market status	0.29	0.10	0.26	0.05	0.04	0.26401151	10,709
HUNGARY	1	2	3	4	5	6	N
1 Out of labforce	0.84 (0.668)	0.06 (0.438)	0.06 (0.422)	0.03 (0.330)	0.01 (0.165)		3,344
2 Unemployed	0.23 (1.559)	0.39 (1.842)	0.23 (1.719)	0.11 (1.151)	0.04 (0.723)		826
3 Wage formal	0.06 (0.334)	0.04 (0.275)	0.86 (0.469)	0.03 (0.254)	0.01 (0.129)		5,184
4 Wage informal	0.18 (1.786)	0.14 (1.623)	0.23 (1.859)	0.40 (2.193)	0.05 (1.041)		569
5 Non-agricultural self employed / unpaid	0.11 (2.007)	0.05 (1.557)	0.13 (2.262)	0.08 (1.619)	0.63 (3.051)		298
6 Agricultural self employed / unpaid							
Share in each labor market status	0.34	0.08	0.49	0.06	0.03		10,220

N denotes number of observations in sample
 Bootstrapped standard errors in parentheses.

Table 7: Transition Matrices (Continued)

MEXICO	1	2	3	4	5	6	N
1 Out of labforce	0.81 (0.001)	0.02 (0.000)	0.06 (0.001)	0.07 (0.001)	0.04 (0.001)		143,535
2 Unemployed	0.30 (0.005)	0.12 (0.003)	0.26 (0.005)	0.24 (0.004)	0.08 (0.003)		9,098
3 Wage formal	0.07 (0.001)	0.02 (0.000)	0.75 (0.001)	0.13 (0.001)	0.03 (0.001)		95,103
4 Wage informal	0.14 (0.001)	0.03 (0.001)	0.27 (0.002)	0.47 (0.002)	0.09 (0.001)		57,325
5 Non-agricultural self employed / unpaid	0.19 (0.002)	0.02 (0.001)	0.08 (0.002)	0.15 (0.002)	0.57 (0.002)		33,115
6 Agricultural self employed / unpaid							
Share in each labor market status	0.41	0.03	0.29	0.17	0.10		338,176
POLAND	1	2	3	4	5	6	N
1 Out of labforce	0.90 (0.191)	0.06 (0.140)	0.01 (0.073)	0.02 (0.079)	0.00 (0.035)	0.01 (0.062)	27,889
2 Unemployed	0.14 (0.376)	0.67 (0.492)	0.06 (0.265)	0.10 (0.317)	0.01 (0.112)	0.02 (0.124)	9,725
3 Wage formal	0.03 (0.107)	0.04 (0.126)	0.90 (0.196)	0.02 (0.091)	0.00 (0.032)	0.00 (0.034)	29,546
4 Wage informal	0.08 (0.542)	0.16 (0.699)	0.25 (0.897)	0.49 (1.014)	0.01 (0.174)	0.02 (0.221)	2,997
5 Non-agricultural self employed / unpaid	0.04 (0.419)	0.06 (0.552)	0.03 (0.474)	0.01 (0.251)	0.86 (0.848)	0.01 (0.149)	2,109
6 Agricultural self employed / unpaid	0.03 (0.186)	0.01 (0.100)	0.01 (0.101)	0.01 (0.124)	0.00 (0.057)	0.94 (0.256)	7,059
Share in each labor market status	0.35	0.12	0.36	0.05	0.03	0.092079899	79,324
UKRAINE	1	2	3	4	5	6	N
1 Out of labforce	0.76 (0.010)	0.10 (0.008)	0.09 (0.007)	0.04 (0.005)	0.01 (0.003)		2,030
2 Unemployed	0.25 (0.019)	0.33 (0.019)	0.26 (0.018)	0.13 (0.014)	0.03 (0.009)		658
3 Wage formal	0.06 (0.005)	0.04 (0.004)	0.86 (0.008)	0.03 (0.004)	0.01 (0.002)		2,725
4 Wage informal	0.08 (0.020)	0.08 (0.020)	0.32 (0.041)	0.47 (0.044)	0.05 (0.017)		184
5 Non-agricultural self employed / unpaid	0.12 (0.042)	0.11 (0.038)	0.12 (0.041)	0.15 (0.047)	0.50 (0.062)		71
6 Agricultural self employed / unpaid							
Share in each labor market status	0.34	0.10	0.49	0.06	0.02		5,668
VENEZUELA	1	2	3	4	5	6	N
1 Out of labforce	0.79 (0.002)	0.04 (0.001)	0.03 (0.001)	0.06 (0.002)	0.08 (0.001)	0.01 (0.002)	38,055
2 Unemployed	0.22 (0.008)	0.25 (0.009)	0.17 (0.006)	0.19 (0.007)	0.15 (0.002)	0.02 (0.007)	4,706
3 Wage formal	0.06 (0.002)	0.05 (0.002)	0.75 (0.004)	0.09 (0.003)	0.05 (0.000)	0.00 (0.002)	18,009
4 Wage informal	0.13 (0.004)	0.08 (0.003)	0.22 (0.005)	0.39 (0.006)	0.13 (0.003)	0.04 (0.004)	12,699
5 Non-agricultural self employed / unpaid	0.17 (0.008)	0.05 (0.005)	0.06 (0.004)	0.11 (0.011)	0.58 (0.015)	0.04 (0.006)	14,243
6 Agricultural self employed / unpaid	0.09 (0.004)	0.03 (0.002)	0.02 (0.003)	0.17 (0.003)	0.05 (0.003)	0.63 (0.005)	1,801
Share in each labor market status	0.40	0.06	0.21	0.13	0.16	0.028727615	89,513

N denotes number of observations in sample
 Bootstrapped standard errors in parentheses.